

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application:

Inventor: Michael R. Hufford, et al.

Application No.: 09/825,533

Filed: April 2, 2001

Title: **SYSTEM FOR CLINICAL TRIAL  
SUBJECT COMPLIANCE**

Confirmation No.: **9781**

Examiner: Martin A. Gottschalk

Group Art Unit: 3696

Customer No. **21971**

PROPOSED AGENDA AND DRAFT CLAIMS FOR DISCUSSION PURPOSES  
**PLEASE DO NOT ENTER**

Dear Examiner Gottschalk:

Applicant has provided draft amended claims for discussion purposes only. We would like to discuss the proposed claims in view of the outstanding rejections under 35 U.S.C. 103(a).

## **CLAIMS:**

1-3 (Cancelled).

4. (Currently Amended) A method of determining ~~preferred targets for~~ if action is needed regarding subject compliance during a current clinical trial, wherein said current clinical trial comprises a group of subjects participating in said current clinical trial, comprising the steps of:

providing at least one of the group of historical subject compliance data and historical protocol data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state, and wherein historical protocol data comprises a question posed to a subject, the frequency of prompting of a subject during the day or week, the amount of time allotted for a subject to respond to a question, or a condition mandating removal of a subject from data analysis or from participation in a clinical trial;

generating ~~at least one~~ a preferred compliance threshold for use during the current clinical trial by quantitative analysis of at least one of the group of the historical subject compliance data and the historical protocol data from the previous clinical trial; and

obtaining subject compliance information from ~~a subject~~ from each subject in said group of subjects participating in said current clinical trial comprising using a portable electronic device capable of displaying information and receiving and storing input from a user to obtain said subject compliance information from said each subject in said group of subjects; and

comparing the subject compliance information from said each subject in said group of subjects to the ~~at least one~~ preferred compliance threshold to determine if action is needed for said each subject in said group of subjects, wherein said action comprises removing all or part of the data from said subject in said group of subjects participating in said current clinical trial from data analysis, removing all or part of the data from said subject in said group of subjects participating in said current clinical trial from a report, removing said subject in said group of subjects participating in said current clinical trial from said current clinical trial, prompting said subject in said group of subjects participating in said current clinical trial to view said portable electronic device, alerting clinical staff to contact said subject in said group of subjects participating in said current clinical trial regarding compliance with said clinical trial, providing compliance feedback to said subject in said group of subjects participating in said current clinical trial to encourage continued compliance with said current clinical trial, providing compliance feedback to said subject in said group of subjects participating in said current clinical to remediate poor compliance with said current

clinical trial, providing a report on the compliance of said subject in said group of subjects participating in said current clinical to said clinical staff or a clinical trial sponsor, or training said clinical staff in the monitoring and correcting of subject compliance.

5. (Canceled)

6. (Previously Presented) The method of determining preferred targets for subject compliance of claim 4, further comprising the step of prompting action if the step of comparing indicates that action is needed.

7-8 (Canceled)

9. (Currently Amended) The method of ~~predicting subject noncompliance~~ of claim ~~824~~, wherein said step of providing further comprises providing historical protocol data, wherein historical protocol data comprises a question posed to a subject, the frequency of prompting of a subject during the day or week, the amount of time allotted for a subject to respond to a question, or a condition mandating removal of a subject from data analysis or from participation in a clinical trial and wherein said step of generating further comprises quantitative analysis of the historical protocol data.

10-11 (Canceled).

12. (Currently Amended) The method of ~~determining subject compliance~~ of claim ~~248~~, wherein the step of generating employs at least one of the group of multiple linear regression, discriminant function analysis, logistic regression, neural networks, classification trees and regression trees.

13. (Currently Amended) The method of ~~determining subject compliance~~ of claim ~~248~~, wherein the step of providing employs at least one database containing the historical subject compliance data.

14-15 (Canceled).

16. (Currently Amended) A method of ~~predicting-determining if action is needed regarding~~ subject noncompliance during a current clinical trial wherein said current clinical trial comprises a group of subjects participating in said current clinical trial, comprising the steps of:

providing historical subject compliance data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state;

generating ~~at least one~~ a predictive algorithm for predicting subject noncompliance by quantitative analysis of the historical subject compliance data;

translating the ~~at least one~~ predictive algorithm into at least one prediction rule for use during the current clinical trial;

obtaining subject compliance information from ~~a subject~~ from said each subject in said group of subjects participating in said current clinical trial comprising using a portable electronic device capable of

displaying information and receiving and storing input from a user to obtain said subject compliance information;

comparing the subject compliance information from said each subject in said group of subjects to the ~~at least one~~ prediction rule to determine if action is needed for said each subject in said group of subjects; and

prompting action if the step of comparing indicates that action is needed.

17. (Previously Presented) The method of predicting subject noncompliance of claim 16, wherein said step of providing further comprises providing historical protocol data and wherein said step of generating further comprises quantitative analysis of the historical protocol data, wherein historical protocol data comprises a question posed to a subject, the frequency of prompting of a subject during the day or week, the amount of time allotted for a subject to respond to a question, or a condition mandating removal of a subject from data analysis or from participation in a clinical trial.

18-19. (Canceled).

20. (Original) The method of predicting subject noncompliance of claim 16, further comprising the step of creating an evaluability database adapted to store data related to subject compliance.

21. (Previously Presented) The method of predicting subject noncompliance of claim 20, further comprising the step of providing access to the evaluability database to a sponsor to allow the sponsor to make a determination regarding a subject based on data from the evaluability database.

22. (Previously Presented) The method of predicting subject noncompliance of claim 20, wherein the evaluability database is tailored to a condition affecting the subject.

23. (Original) The method of determining subject noncompliance of claim 16, wherein the step of providing employs at least one database containing the historical subject compliance data.

24. (Currently Amended) A method of ~~enhancing~~ determining if action is needed regarding subject compliance during a current clinical trial, wherein said current clinical trial comprises a group of subjects participating in said current clinical trial, comprising the steps of:

providing historical subject compliance data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state;

generating ~~at least one~~ an algorithm by quantitative analysis of the historical subject compliance data;

translating the ~~at least one~~ algorithm into a ~~at least one~~ decision rule for use ~~using~~ during the current clinical trial;

obtaining subject compliance information from ~~a subject~~ from each subject in said group of subjects participating in said current clinical trial; and

comparing the subject compliance information from said each subject in said group of subjects to the ~~at least one~~ decision rule on a portable electronic device or a computer to determine if affirmative corrective action is ~~warranted~~ needed for said each subject in said group of subjects, wherein said action comprises removing all or part of the data from said subject participating in said current clinical trial from data analysis, removing all or part of the data from said subject participating in said current clinical trial from a report, removing said subject participating in said current clinical trial from said current clinical trial, prompting said subject participating in said current clinical trial to view said portable electronic device, alerting clinical staff to contact said subject participating in said current clinical trial regarding compliance with said clinical trial, providing compliance feedback to said subject participating in said current clinical trial to encourage continued compliance with said current clinical trial, providing compliance feedback to said subject participating in said current clinical trial to remediate poor compliance with said current clinical trial, providing a report on the compliance of said subject participating in said current clinical trial to said clinical staff or a clinical trial sponsor, or training said clinical staff in the monitoring and correcting of subject compliance.

25. (Previously Presented) The method of predicting subject noncompliance of claim 24, wherein said step of providing further comprises - providing historical protocol data and wherein said step of generating further comprises quantitative analysis of the historical protocol data, wherein historical protocol data comprises a question posed to a subject, the frequency of prompting of a subject during the day or week, the amount of time allotted for a subject to respond to a question, or a condition mandating removal of a subject from data analysis or from participation in a clinical trial.

26. (Currently Amended) The method of enhancing subject compliance of claim 24, further comprising the step of prompting action if the step of comparing indicates that affirmative corrective action is warranted.

27. (Currently Amended) The method of enhancing subject compliance of claim 24, wherein the affirmative corrective action further comprises - reducing a number of occurrences of the step of obtaining subject compliance information.

28. (Currently Amended) The method of enhancing subject compliance of claim 24, wherein the affirmative corrective action further comprises - increasing a number of occurrences of the step of obtaining subject compliance information.

29. (Currently Amended) The method of enhancing subject compliance of claim 24, wherein the affirmative corrective action further comprises giving a reward to a.

30. (Previously Presented) The method of enhancing subject compliance of claim 24, wherein the step of obtaining comprises the use of a portable electronic device capable of displaying information and receiving and storing input from a user.

31-47 (Cancelled).

48. (Currently Amended) A computer readable medium suitable for use in an electronic device and having instructions recorded thereon for execution on the electronic device, the instructions comprising the steps of claim 16.

~~providing at least one of the group of historical subject compliance data and historical protocol data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state, and wherein historical protocol data comprises a question posed to a subject, the frequency of prompting of a subject during the day or week, the amount of time allotted for a subject to respond to a question, or a condition mandating removal of a subject from data analysis or from participation in a clinical trial; and~~

~~—generating at least one preferred compliance threshold for the use during a current clinical trial by quantitative analysis of at least one of the group of the historical subject compliance data and the historical protocol data from a previous clinical trial.~~

49. (Canceled).

50. (Currently Amended) A computer readable medium suitable for use in an electronic device and having instructions recorded thereon for execution on the electronic device, the instructions comprising the steps of claim 4.

~~providing historical subject compliance data and historical protocol data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state, and wherein historical protocol data comprises a question posed to a subject, the frequency of prompting of a subject during the day or week, the amount of time allotted for a subject to respond to a question, or a condition mandating removal of a subject from data analysis or from participation in a clinical trial;~~

~~—generating a spectrum of compliance representative of the historical subject compliance data not compliant with the historical protocol data by quantitative analysis of the historical subject compliance data and the historical protocol data;~~

—— obtaining subject compliance information from a subject participating in a during a current clinical trial;

—— comparing the spectrum of compliance to the subject compliance information to determine if corrective action is needed; and

—— prompting corrective action if the step of comparing indicates that corrective action is needed, wherein said action comprises removing all or part of the data from said subject participating in said current clinical trial from data analysis, removing all or part of the data from said subject participating in said current clinical trial from a report, removing said subject participating in said current clinical trial from said current clinical trial, prompting said subject participating in said current clinical trial to view said portable electronic device, alerting clinical staff to contact said subject participating in said current clinical trial regarding compliance with said clinical trial, providing compliance feedback to said subject participating in said current clinical trial to encourage continued compliance with said current clinical trial, providing compliance feedback to said subject participating in said current clinical to remediate poor compliance with said current clinical trial, providing a report on the compliance of said subject participating in said current clinical to said clinical staff or a clinical trial sponsor, or training said clinical staff in the monitoring and correcting of subject compliance.

51. (Currently Amended) A computer readable medium suitable for use in an electronic device and having instructions recorded thereon for execution on the electronic device, the instructions comprising the steps of claim 16

—— providing historical subject compliance data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state;

—— generating at least one predictive algorithm for predicting subject noncompliance by quantitative analysis of the historical subject compliance data;

—— translating the at least one predictive algorithm into at least one prediction rule for use during a current clinical trial;

—— obtaining subject compliance information from a subject participating in said current clinical trial;

—— comparing the subject compliance information to the at least one prediction rule to determine if action is needed; and

—— prompting action if the step of comparing indicates that action is needed, wherein said action comprises removing all or part of the data from said subject participating in said current clinical trial from data analysis, removing all or part of the data from said subject participating in said current clinical trial

from a report, removing said subject participating in said current clinical trial from said current clinical trial, prompting said subject participating in said current clinical trial to view said portable electronic device, alerting clinical staff to contact said subject participating in said current clinical trial regarding compliance with said clinical trial, providing compliance feedback to said subject participating in said current clinical trial to encourage continued compliance with said current clinical trial, providing compliance feedback to said subject participating in said current clinical trial to remediate poor compliance with said current clinical trial, providing a report on the compliance of said subject participating in said current clinical trial to said clinical staff or a clinical trial sponsor, or training said clinical staff in the monitoring and correcting of subject compliance.

52. (Currently Amended) A computer readable medium suitable for use in an electronic device and having instructions recorded thereon for execution on the electronic device, the instructions comprising the steps of claim 24.

~~providing historical subject compliance data from a previous clinical trial, wherein historical subject compliance data comprises, data on timeliness of a data entry, data on a ratio of completed assessments to expected assessments, data on a subject's compliance with a medication regimen, data on a disease episode, or data on a characteristic of a subject's disease state;~~

~~—generating at least one algorithm by quantitative analysis of the historical subject compliance data;~~

~~—translating the at least one algorithm into at least one decision rule for use during a current clinical trial;~~

~~—obtaining subject compliance information from a subject participating in said current clinical trial; and~~

~~—comparing the subject compliance information to the at least one decision rule to determine if affirmative action is warranted, wherein said action comprises removing all or part of the data from said subject participating in said current clinical trial from data analysis, removing all or part of the data from said subject participating in said current clinical trial from a report, removing said subject participating in said current clinical trial from said current clinical trial, prompting said subject participating in said current clinical trial to view said portable electronic device, alerting clinical staff to contact said subject participating in said current clinical trial regarding compliance with said clinical trial, providing compliance feedback to said subject participating in said current clinical trial to encourage continued compliance with said current clinical trial, providing compliance feedback to said subject participating in said current clinical trial to remediate poor compliance with said current clinical trial, providing a report on the compliance of said subject participating in said current clinical trial to said clinical staff or a clinical trial sponsor, or training said clinical staff in the monitoring and correcting of subject compliance.~~



53. (Cancelled)

54. (Currently Amended) The method of claims 4, ~~8, 14~~, 16, or 24, wherein said historical subject compliance data further comprises data on whether a subject had a relationship with a doctor or other medical professional, data on a number or percent of prompts not replied to by a subject, data on a subject's sleep/wake cycle, data on whether a subject had a bowel movement, data on an amount of time a portable electronic device is in suspend mode, data on a subject's gender, or data on a subject's location.

55. (Previously Presented) The computer readable medium of claims 48, 49, 50, 51, or 52, wherein said historical subject compliance data further comprises data on whether a subject had a relationship with a doctor or other medical professional, data on a number or percent of prompts not replied to by a subject, data on a subject's sleep/wake cycle, data on whether a subject had a bowel movement, data on an amount of time a portable electronic device is in suspend mode, data on a subject's gender, or data on a subject's location.

56. (Currently Amended) The method of claims ~~6, 4~~, ~~8, 14~~, 16, or 24, wherein said action further comprises decreasing said portable electronic device's prompt frequency, increasing said portable electronic device's prompt frequency, increasing the loudness of an audible prompt of said portable electronic device, or administering a reward to said subject participating in the current clinical.

57. (Previously Presented) The computer readable medium of claims 48, 49, 50, 51, or 52, wherein said action further comprises decreasing said portable electronic device's prompt frequency, increasing said portable electronic device's prompt frequency, increasing the loudness of an audible prompt of said portable electronic device, or administering a reward to said subject participating in the current clinical.

58. (New) The method of claim 4, wherein said compliance threshold is constant throughout said current clinical trial.

59. (New) The method of claims 16, wherein said prediction rule is constant throughout said current clinical trial.

59. (New) The method of claims 24, wherein said decision rule is constant throughout said current clinical trial.